APPENDIX.

THE first volume of the Ben Nevis observations, published in 1890, contains an account of the foundation of the Observatory and a summary of the results deduced from the observations up to that time. The Low Level Observatory in Fort-William was opened in July 1890. Since then several new lines of investigation have opened up, more especially in regard to the double series of hourly observations at the two Observatories. The results, as far as they have gone, of some of these more recent discussions are given here, and also abstracts of papers on subjects connected with the Observatories that have appeared in the publications of the Royal Society of Edinburgh and the Scottish Meteorological Society since the first volume was issued.

The last items in this Appendix are tables for adjusting hourly values and for reducing the Ben Nevis barometer to sea level.

Diurnal Range of the Barometer in Fine and in Cloudy Weather.

By ALEX. BUCHAN, LL.D., F.R.S., and R. T. OMOND.

This investigation was undertaken with the view of ascertaining how the mean hourly values of the barometer differed on days in which radiation, solar and terrestrial, was great from days in which it was interfered with by clouds. A preliminary examination of the barometric readings at the Ben Nevis and Fort-William Observatories showed that there was a well marked difference between the diurnal fluctuations in these two kinds of weather; and the investigation was thereafter extended to several other places in the northern hemisphere. The materials for this work are only available from comparatively few places, it being necessary to have before us the hourly readings of the barometer for every day, and also an hourly record either of sunshine or of cloud. These two separate data have not been published for any place in the British Islands except Ben Nevis and Fort-William. But several of the Continental meteorological observatories give in their reports the readings of the barometer and the amount of bright sunshine at each hour of each day. Certain tropical stations also give these data, while at the special Arctic stations where observations were taken in 1882 and 1883, hourly readings of the barometer and of the amount of cloud are given. The records of the following nine stations have been utilised in this discussion.

	Lat. N.	Long.	Height Feet
San José, Costa Rica . . .	9° 56′	84° 0′ W.	3756
Hong Kong, China . . .	22 18	114 11 E.	110
Trieste, Austria	45 39	13 46 E.	85
Magdeburg, Germany . . .	52 8	11 38 E.	177
Ben Nevis, Scotland . . .	56 48	5 1 W.	4407
Fort-William, „ . . .	56 49	5 7 W.	42
Sodankylä, Finland . . .	67 24	26 36 E.	594
Bossekop, Norway . . .	69 57	23 15 E.	35
Jan Mayen, North Atlantic . .	70 59	8 28 W.	98

These stations extend from the tropics to the Arctic regions, and include inland, coast, and island stations. At each of the first six stations a period of three years was taken, but at the three Arctic stations only one year was available. At each place days were selected on which the sky was clear or only slightly clouded during the whole day, and the hourly barometric readings for these days taken, grouping them according to months. Then similarly readings were taken of those days in which the sky was overcast or nearly so all day, the only exception being at Ben Nevis, where, instead of overcast, days of continuous fog were taken for the cloudy period. No

account was taken of whether rain was falling or not in selecting the days, nor of any other meteorological condition except clear or clouded skies.

With each day was included the midnight of the previous day, so as to show by the difference of the two midnights when the barometer was, on the whole, rising or falling during the periods selected; and also to give the means of eliminating this general rise or fall in order to arrive at the strictly diurnal phenomena. The method used for this elimination and a table for facilitating it are given on page 543.

This adjustment of the hourly values is necessary to disentangle the diurnal changes from those of longer periods; otherwise the entries in the tables are simply arithmetical means of the barometers reduced to 32° but not to sea level.

The result may be broadly stated thus. The diurnal curve with double maximum and minimum points is distorted in the same way at all the stations—namely, in fine days, the forenoon maximum and afternoon minimum are increased while the evening maximum and early morning minimum are diminished. On cloudy days the reverse takes place, the evening maximum and early morning minimum being increased and the forenoon maximum and afternoon minimum diminished. These effects are larger at temperate and Arctic stations than in the tropics, although there the diurnal fluctuations are so much greater.

The numerical values for each station are given in the accompanying tables (pages 455 to 463), showing for each station—

1st. The diurnal range of the barometer for each month of the year, without any selection of special days.

2nd. The diurnal range on days with little or no cloud, these days being grouped and averaged in their respective months.

3rd. The diurnal range on days when the sky was overcast, or nearly so, all day, similarly grouped and averaged.

Each table is arranged in the same manner. Each of the twenty-four hours of the day occupy a column, and each of the twelve months a line. At the right hand is given the mean value for each month of the barometer in inches and decimals, and under each hour the difference between the mean at that hour, and the general mean of the month in thousandths of an inch, heavy type figures indicating that the hourly mean exceeds the general mean, and italic figures the reverse. At the foot of each table is given the values for the year, being the average of the twelve monthly values. In the tables for fine and cloudy days the total number of selected days in each month is given in the column headed "Days."

It is well known that the diurnal range of the barometer is greatest near the Equator and diminishes almost to vanishing in the Arctic regions. This is well illustrated in the

means for the complete months at these nine stations, the difference between the highest and lowest hourly value on the mean of the year being as follows :—

	Lat. N.	Highest.	Lowest.	Range.
San José	9°·56′	+ ·031	− ·046	·077
Hong Kong . . .	22 18	+ ·045	− ·044	·089
Trieste	45 39	+ ·011	− ·014	·025
Magdeburg . . .	52 8	+ ·012	− ·013	·025
Ben Nevis	56 48	+ ·009	− ·015	·024
Fort William . . .	56 49	+ ·009	− ·010	·019
Sodankylä . . .	67 24	+ ·004	− ·006	·010
Bossekop . . .	69 57	+ ·005	− ·005	·010
Jan Mayen . . .	70 59	+ ·005	− ·006	011

This steady diminution of barometric range with increase of latitude, and the fact that the double diurnal oscillation of the barometer appears at all these stations on the mean of the year, indicates that they may be taken as a typical set of stations. At Ben Nevis, being a mountain station, the afternoon minimum of pressure is small, but it does not wholly disappear. This remark applies to all places more or less under the influence of land. But in the Arctic Ocean in the summer months, at a distance from land, the diurnal barometric curve shows only one maximum and minimum in the day.

Turning now to the tables for each place giving the mean range on fine and cloudy days, it appears that at the tropical stations there is little difference between the hourly departures on either fine or cloudy days from the normal hourly curves for the complete months, but at temperate and Arctic stations, the fine and cloudy days differ considerably; indeed, in the Arctic regions the fine and cloudy day curves are so distinct that the difference between them is greater than the amount of the normal diurnal range of the complete months.

The following table gives the difference in thousandths of an inch between fine and cloudy days at the nine stations on the mean of the year; the heavy figures indicating that the barometer is higher on fine than on cloudy days, and the italic figures the reverse.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.
San José .	**2**	**3**	**5**	**6**	**6**	**7**	**6**	**7**	**3**	*1*	*1*	*3*	*6*	*8*	*9*	*8*	*7*	*5*	*2*	*0*	*0*	**0**	**2**	**1**
Hong Kong .	**2**	**4**	**7**	**9**	**10**	**9**	**10**	**10**	**8**	**5**	**3**	**1**	**1**	*5*	*7*	*10*	*10*	*12*	*10*	*8*	*7*	*6*	*3*	*2*
Trieste . .	*9*	*4*	**1**	**6**	**9**	**12**	**14**	**15**	**12**	**8**	**6**	**7**	**6**	**4**	**1**	*2*	*5*	*7*	*11*	*10*	*11*	*11*	*13*	*17*
Magdeburg .	*14*	*11*	*5*	*1*	**4**	**10**	**13**	**17**	**18**	**17**	**15**	**11**	**8**	**4**	**1**	*3*	*5*	*7*	*8*	*9*	*11*	*13*	*15*	*19*
Ben Nevis .	*19*	*12*	*9*	*4*	*2*	**3**	**6**	**8**	**12**	**13**	**14**	**14**	**14**	**13**	**10**	**7**	**5**	**2**	*3*	*7*	*10*	*15*	*19*	*24*
Fort William	*18*	*10*	*2*	**4**	**10**	**15**	**19**	**22**	**23**	**20**	**17**	**13**	**8**	**3**	**0**	*4*	*8*	*10*	*11*	*13*	*15*	*18*	*20*	*25*
Sodankylä .	*5*	*1*	**3**	**7**	**9**	**10**	**12**	**9**	**7**	**7**	**4**	**1**	*1*	*1*	*4*	*5*	*6*	*5*	*7*	*5*	*7*	*6*	*8*	*10*
Bossekop .	*15*	*8*	*1*	**5**	**10**	**15**	**18**	**18**	**17**	**12**	**11**	**7**	**4**	**1**	*1*	*2*	*6*	*9*	*12*	*11*	*11*	*11*	*13*	*17*
Jan Mayen .	*37*	*31*	*24*	*21*	*15*	*5*	**3**	**8**	**15**	**20**	**24**	**26**	**27**	**26**	**25**	**23**	**19**	**13**	**9**	**3**	*10*	*20*	*33*	*46*

From this it appears that the least difference between the diurnal barometric range on fine and on cloudy days is at the tropical station of San José in the dry climate of

Costa Rica, and the greatest difference is at the Arctic station of Jan Mayen, an island surrounded by the moisture-laden air of the North Atlantic Ocean; and it is further noteworthy that the difference between the clear and cloudy days is as distinct at Jan Mayen in December and January, when the sun was all but permanently below the horizon, as at any other season (see page 463). In general, the differences between fine and cloudy days are greater in high than in low latitudes, and in damp as against dry climates, indicating that the effect depends on the thickness of the atmospheric screen through which the sun's rays penetrate, and on the quantity of condensing water-vapour present, or, more strictly, on the relative humidity. The latter, at all events, seems the most probable explanation of the differences between Sodankylä, Bossekop, and Jan Mayen, all within the Arctic circle, but the first in a comparatively dry part of Finland, the second far north on the west coast of Norway, where rain is more abundant, and the last in the ocean to the north of Iceland.

Nevertheless the general character of the fine and cloudy day curves is the same at all the stations. Starting from the ordinary diurnal barometric curve, which has a minimum in the early morning, a maximum in the forenoon, another minimum in the afternoon, and a second maximum in the evening, we find that by selecting the fine days only, we increase the forenoon maximum and the afternoon minimum, and diminish the evening maximum and the morning minimum; while on the cloudy days the reverse takes place, the evening maximum and early morning minimum are increased, and the forenoon maximum and afternoon minimum are diminished. At the tropical stations the difference of the fine and cloudy days respectively from the general average only amounts to a few thousandths of an inch, but in the Arctic regions the changes are so great as to alter the character of the curve. It becomes at Jan Mayen a one period curve with its maximum at noon in fine days and at midnight on cloudy, the fine day curves being more regular from month to month than the cloudy. At the two other Arctic stations the fine day maximum is in the forenoon in most of the months, and the time of maximum of the cloudy day curves is more irregular. It must be borne in mind that the monthly values at these Arctic stations are the means of comparatively few days, generally from four to ten in each month, and as the results have not been smoothed in any way they do not give very regular curves.

At Trieste, Magdeburg, and Fort William in the temperate zone we find the double character of the diurnal curve persisting on both fine and cloudy days; but while on the general means of the complete months the forenoon and night maxima of pressure are approximately equal in amount, on fine days the former is greatly increased, while the evening maximum is reduced; indeed, at Magdeburg and Fort William on the annual fine day mean this latter, though still a maximum point, does not reach the mean value for the day. On cloudy days, on the contrary, the evening maximum becomes predominant, and at Fort William the forenoon maximum is depressed below the mean value in the yearly average, but at the other two stations it still appears as a minor maximum above the mean. At Ben Nevis Observatory the ordinary diurnal

curve is distorted by the expansion and contraction of the air below the level of the summit, due to the diurnal changes of temperature, which adds to the total amount of air weighed by the barometer there during the daytime and subtracts from it at night, thus reducing the afternoon minimum and increasing the morning one. But the changes induced on this distorted diurnal curve by the selection of fine and cloudy days are of exactly the same nature as at the other stations in the temperate zone.

The results of selecting fine or cloudy days are perhaps best seen in the subjoined table, which gives, first, the difference of the annual fine day curve from the annual general curve at each station; and, second, the same difference for the cloudy days. In each case where the barometric reading is raised the amount in thousandths of an inch is given in bold type, and where it is lowered, in italic. It is at once evident that the selection of fine days raises the barometric means in the forenoon and lowers them at night, while cloudy days have the opposite effect at virtually all the stations.

DIFFERENCE OF FINE DAY ANNUAL MEANS FROM GENERAL ANNUAL MEANS.

Excess of fine in bold type and defect in italic type.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
San José .	**2**	**2**	**2**	**2**	**3**	**4**	**4**	**4**	**2**	**0**	*0*	*2*	*4*	*4*	*4*	*5*	*5*	*3*	*1*	*1*	*0*	*0*	**1**	**1**	**·003**
Hong Kong .	*0*	**2**	**2**	**4**	**5**	**4**	**5**	**5**	**4**	**3**	**2**	**1**	**1**	*1*	*3*	*4*	*4*	*6*	*6*	*5*	*5*	*3*	*2*	*1*	**·031**
Trieste . .	*4*	*2*	*1*	**1**	**3**	**5**	**6**	**6**	**5**	**4**	**3**	**4**	**3**	**2**	*0*	*1*	*2*	*3*	*4*	*4*	*4*	*5*	*6*	*6*	**·125**
Magdeburg .	*8*	*7*	*4*	*1*	**2**	**5**	**7**	**9**	**9**	**9**	**8**	**6**	**5**	**4**	**1**	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*9*	*11*	**·093**
Ben Nevis .	*11*	*8*	*6*	*3*	*2*	**1**	**2**	**4**	**6**	**7**	**8**	**9**	**8**	**8**	**6**	**4**	**3**	**2**	*1*	*3*	*5*	*6*	*10*	*12*	**·159**
Fort William	*10*	*6*	*3*	*0*	**3**	**7**	**9**	**12**	**12**	**11**	**9**	**7**	**5**	**3**	**0**	*2*	*3*	*5*	*5*	*6*	*7*	*9*	*10*	*14*	**·180**
Sodankylä .	*7*	*4*	*0*	**3**	**6**	**7**	**8**	**6**	**5**	**7**	**4**	**4**	**2**	**3**	**1**	*0*	*2*	*2*	*3*	*4*	*6*	*7*	*8*	*11*	**·160**
Bossekop .	*6*	*3*	*0*	**3**	**4**	**7**	**9**	**8**	**7**	**5**	**5**	**1**	**0**	*1*	*2*	*3*	*4*	*5*	*9*	*5*	*4*	*3*	*4*	*5*	**·140**
Jan Mayen .	*26*	*20*	*16*	*13*	*8*	*2*	**3**	**7**	**11**	**15**	**16**	**18**	**18**	**16**	**15**	**14**	**10**	**7**	**4**	**2**	*6*	*13*	*22*	*30*	**·150**

DIFFERENCE OF CLOUDY DAY ANNUAL MEANS FROM GENERAL ANNUAL MEANS.

Excess of cloudy in bold type and defect in italic type.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
San José .	*0*	*1*	*4*	*4*	*3*	*3*	*2*	*3*	*1*	**1**	**1**	**1**	**2**	**4**	**5**	**3**	**2**	**2**	**1**	*1*	*0*	*0*	*1*	*0*	**·002**
Hong Kong .	*2*	*2*	*5*	*4*	*5*	*5*	*5*	*5*	*4*	*2*	*1*	*0*	*0*	**4**	**5**	**6**	**6**	**6**	**4**	**3**	**2**	**3**	**1**	**1**	*·031*
Trieste . .	**5**	**2**	*2*	*5*	*6*	*7*	*8*	*9*	*7*	*4*	*3*	*3*	*3*	*2*	*1*	**1**	**4**	**4**	**7**	**6**	**7**	**6**	**7**	**11**	*·135*
Magdeburg .	**6**	**4**	**1**	*0*	*2*	*5*	*6*	*8*	*9*	*8*	*7*	*5*	*3*	*0*	*0*	**2**	**3**	**4**	**4**	**4**	**5**	**6**	**6**	**8**	*·020*
Ben Nevis .	**8**	**4**	**3**	**1**	*0*	*2*	*4*	*4*	*6*	*6*	*6*	*6*	*6*	*4*	*4*	*3*	*2*	*0*	**2**	**4**	**5**	**9**	**9**	**12**	*·130*
Fort William	**8**	**4**	*1*	*4*	*7*	*8*	*10*	*10*	*11*	*9*	*8*	*6*	*3*	*0*	*0*	**2**	**5**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	*·134*
Sodankylä .	*2*	*3*	*3*	*4*	*3*	*3*	*4*	*3*	*2*	*0*	*0*	**3**	**3**	**4**	**5**	**5**	**4**	**3**	**4**	**1**	**1**	*1*	*0*	*1*	*·030*
Bossekop .	**9**	**4**	**1**	*2*	*6*	*8*	*9*	*10*	*10*	*7*	*6*	*6*	*4*	*2*	*1*	*1*	**2**	**4**	**3**	**6**	**7**	**8**	**9**	**12**	*·027*
Jan Mayen .	**11**	**11**	**8**	**8**	**7**	**3**	*0*	*1*	*4*	*5*	*8*	*8*	*9*	*10*	*10*	*9*	*9*	*6*	*5*	*1*	**4**	**8**	**11**	**16**	*·081*

Thus on fine days there is superimposed on the ordinary diurnal curve a single period curve with its maximum somewhere between 7 A.M. and 9 A.M. and its minimum at

midnight, except at the tropical stations San José and Hong Kong, where the minimum is in the afternoon. At Ben Nevis and Jan Mayen the maximum is delayed till noon, but the minimum is still at midnight. On cloudy days there is superimposed on the ordinary diurnal curve another single period curve, the converse of the fine day one, with its maximum at midnight, and its minimum at 8 or 9 A.M., but at San José and Hong Kong the maximum is in the afternoon. At Ben Nevis and Jan Mayen the minimum is delayed just as the maximum of the fine days is. Sodankylä on cloudy days is an exception to this rule.

The main difference between the weather conditions on fine and on cloudy days is, that in the former, radiation acts to and from the surface of the ground, but on the latter chiefly to and from the upper surfaces of the clouds, radiation also taking place from the earth to the lower surfaces of the clouds. In other words, the radiant heat of the sun on a fine day is mainly absorbed by the air near the surface of the ground, and the heat so stored up is got rid of at night by radiation from the ground. But on a cloudy day the sun's radiant heat is largely absorbed by the atmosphere in the upper part of the cloud layer, and probably no small part of it is spent in evaporating water from the cloud surface, thus diminishing the rise of temperature in that stratum of air. Night radiation takes place from the same stratum, the upper cloud surface acting as a radiating body, and doubtless also recondensing into itself the water evaporated during the day. If, then, the changes on the diurnal barometric curve due to fine and cloudy days respectively are to be explained as temperature effects, we must connect them, on fine days, with a large diurnal range of temperature in the lower air, while the clear upper atmosphere has little change of temperature.

On cloudy days, on the contrary, the range of temperature of the lower air is less than the normal, and the changes in the upper air greater than is usual for this high region. Therefore on fine days there is an expansion of the lower air while temperature is rising, the effect of which is to lift the quiescent mass of air above it, thus giving rise to a small increase of pressure in the expanding air; but while temperature is falling, and the lower stratum of air contracting, there is a decrease of pressure till the upper mass of air has again sunk. On cloudy days, on the contrary, the lower stratum of air is much less affected by the sun's heat. The rise of the temperature of the ground and of the air immediately resting on it shows a heating effect of the sun, either directly through the intervening cloud, or from the heated cloud itself, the chief absorption of the radiant heat of the sun, however, takes place in the upper part of the cloud stratum. The pressure of the upper air is thus lightened during the day by the rise of temperature and dilution with water vapour from the underlying clouds; and as there is less pressure above to check its expansion, this decrease of density appears as a diminution of pressure at the earth's surface. Conversely the cooling and condensation of water vapour at night increase the density of this upper stratum and add to the pressure below, thus causing the evening maximum of pressure on cloudy days.

This hypothesis agrees with the data given in the table on page 452 for changes due to the selecting fine and cloudy days at the temperate and Arctic stations, except in the cloudy day curve at Sodankylä. The monthly values of cloudy days at Sodankylä, however, show that in spring and autumn the usual law of high pressure at night and low pressure during the day holds, and it is only during the winter when the sun is almost absent, and in the height of summer when it is continuously above the horizon, that the cloudy day curve does not agree with that for other stations.

One other difference between fine and cloudy days is that on the latter rain may fall and not on the former. Several of the selected cloudy days at all the stations were days on which rain did fall, but the rainfall may be regarded as so equally distributed over the different hours of the day in temperate and Arctic regions that it can hardly effect a purely diurnal phenomenon such as is dealt with here.

SAN JOSÉ, COSTA RICA.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
January	8	7	15	17	8	2	17	33	41	38	26	6	18	39	51	51	44	30	8	7	22	30	30	23	26·201
February	11	1	11	16	10	1	16	29	40	39	28	6	17	37	52	53	45	32	10	5	18	28	31	26	·200
March	12	2	13	16	10	2	17	30	39	37	25	6	16	37	51	54	46	31	9	7	20	32	33	27	·195
April	12	2	15	20	14	1	14	27	34	30	20	3	18	35	45	48	42	24	4	9	23	35	37	26	·206
May	9	2	15	20	17	5	9	20	28	25	17	2	18	35	45	45	34	17	2	15	27	34	35	26	·200
June	9	2	12	13	11	5	5	14	22	27	14	3	12	23	34	39	30	15	1	11	20	26	26	20	·193
July	11	1	8	14	13	8	2	9	19	22	15	4	11	22	32	38	28	15	2	12	21	28	27	20	·190
August	12	1	8	13	12	8	3	13	20	24	16	4	12	25	38	40	32	16	1	11	21	30	30	22	·205
September	11	0	10	13	10	3	11	22	28	29	19	1	21	34	43	45	33	18	1	11	22	29	27	20	·194
October	7	4	12	15	7	1	11	21	30	30	11	8	17	34	52	34	18	9	3	10	20	27	26	17	·187
November	10	1	9	12	6	4	17	32	35	34	19	5	28	43	46	54	41	23	3	11	22	28	28	19	·180
December	8	2	9	16	10	7	14	28	36	37	23	6	22	37	47	48	36	20	2	11	24	30	26	18	·202
Year	10	2	11	15	11	2	11	23	31	31	20	3	17	33	45	46	36	21	3	10	22	30	30	22	26·196

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Mid-night.	Mean.	Days.
January	15	3	6	9	1	16	25	43	44	40	26	1	26	46	60	57	53	33	11	0	15	24	30	24	26·204	12
February	14	3	10	15	9	3	18	38	45	42	29	9	16	39	54	58	50	39	15	4	16	28	34	26	·209	12
March	15	2	13	15	9	4	23	32	38	34	22	6	17	35	51	56	52	36	12	6	21	30	36	30	·190	12
April	16	2	7	15	6	3	15	26	33	27	18	1	26	42	56	57	49	28	5	7	24	38	47	34	·207	12
May	12	2	13	16	13	1	16	27	28	25	15	1	19	41	50	53	41	21	0	16	30	34	36	30	·208	12
June	7	2	8	9	7	2	12	18	26	23	13	2	17	28	35	39	29	13	0	10	19	25	22	15	·196	12
July	8	3	13	16	14	9	4	12	20	24	16	4	11	22	33	37	26	12	0	11	21	28	28	20	·193	12
August	14	6	5	10	7	4	5	16	23	26	16	4	14	31	46	51	40	20	0	10	22	30	31	25	·206	12
September	11	1	11	13	8	2	13	25	31	30	19	3	20	35	46	45	32	18	6	7	21	28	25	20	·191	12
October	10	3	11	13	8	0	13	28	36	36	23	1	27	43	54	51	39	20	2	15	27	34	31	20	·188	12
November	16	4	4	9	4	6	19	27	33	31	19	6	28	42	53	56	43	22	1	11	24	30	26	19	·177	12
December	10	1	10	15	7	2	19	32	35	32	19	2	27	42	54	54	41	20	1	15	25	32	28	18	·222	12
Year	12	0	9	13	8	2	15	27	33	31	20	1	21	37	49	51	41	24	4	9	22	30	31	23	26·199	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January	7	9	20	21	12	2	16	30	39	39	21	4	19	36	53	55	34	20	4	10	23	30	25	17	26·207	12
February	11	0	15	18	11	2	13	24	36	38	28	8	11	32	40	43	36	27	11	2	12	22	28	25	·189	12
March	10	6	20	24	17	4	10	26	38	36	27	7	10	27	43	44	39	25	6	6	20	33	31	25	·199	12
April	7	7	17	24	18	7	12	23	31	30	24	9	11	26	39	44	40	22	0	9	23	32	35	22	·211	12
May	12	9	19	25	23	8	3	15	25	27	19	7	14	27	39	44	34	13	15	16	32	36	37	28	·218	12
June	10	3	12	18	18	14	4	8	17	23	19	7	9	21	30	35	29	11	2	11	22	30	32	25	·191	12
July	5	3	13	17	14	6	6	16	27	28	20	8	5	16	30	37	31	16	5	7	16	22	20	14	·199	12
August	14	0	7	11	11	9	4	13	20	24	19	6	7	20	36	44	33	18	10	3	18	30	33	24	·198	12
September	11	2	14	19	16	9	7	19	26	25	13	4	20	28	33	33	19	12	2	14	22	28	24	17	·203	12
October	13	2	8	13	8	0	17	26	34	37	22	2	26	40	43	47	39	22	3	9	20	28	29	22	·184	12
November	9	3	16	17	13	3	10	23	33	38	25	0	21	34	45	48	36	21	3	12	26	34	30	20	·198	12
December	12	2	8	16	10	2	13	22	33	37	19	1	27	41	47	46	34	20	1	11	25	34	28	20	·182	12
Year	10	3	14	19	14	5	9	20	30	32	21	4	15	29	40	43	34	19	2	9	22	30	29	22	26·198	

HONG KONG.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
January .	6	2	10	15	12	1	17	38	53	58	41	12	20	42	51	48	39	27	15	1	10	14	13	10	30·053
February .	8	0	9	11	10	4	21	37	50	55	44	22	7	33	49	51	44	36	23	6	6	14	16	11	·009
March . .	5	8	22	29	24	5	15	34	46	50	44	25	3	26	42	47	42	32	20	1	15	23	25	19	29·944
April . .	7	11	23	24	17	2	15	32	46	48	41	25	2	20	39	47	47	36	21	5	12	23	23	14	·820
May . .	0	13	22	21	16	2	16	30	39	44	38	26	5	14	30	41	43	33	21	6	9	22	24	14	·739
June . .	2	7	13	15	10	0	12	21	29	31	28	17	5	10	25	36	39	31	18	2	10	23	23	14	·633
July . .	7	3	9	13	10	0	12	20	28	29	25	13	1	15	29	39	42	36	22	4	12	24	24	18	·614
August. .	6	7	14	18	15	4	10	21	30	33	29	16	1	19	32	41	42	33	21	0	18	28	28	19	.636
September .	4	7	17	20	13	1	14	30	37	39	33	16	6	24	37	42	39	31	17	3	21	27	24	16	·746
October .	2	11	18	20	12	3	21	36	47	48	34	12	13	32	42	42	37	27	13	7	19	22	19	11	·861
November .	0	10	17	19	13	2	21	36	51	49	32	7	24	43	51	48	36	24	6	10	18	22	20	13	·976
December .	5	3	11	13	11	1	19	40	55	55	40	11	24	45	54	52	40	28	12	3	13	17	14	9	30·007
Year . .	4	7	15	18	14	0	16	31	43	45	36	17	7	27	40	44	41	31	17	0	14	21	21	14	29·836

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	8	2	6	9	6	3	18	41	58	59	41	12	22	44	54	53	44	32	17	1	11	15	14	12	30·096	20
February .	8	1	3	5	1	12	29	42	53	58	47	25	10	38	56	58	53	45	33	14	1	9	12	9	·079	18
March . .	12	6	12	25	22	2	19	36	49	53	46	23	1	29	47	52	45	37	25	7	12	25	28	23	29·905	7
April . .	4	17	27	27	18	3	17	39	50	53	48	34	10	15	32	44	46	37	23	9	9	20	20	9	·870	12
May . .	1	11	19	18	12	4	21	38	45	49	42	29	7	13	33	50	52	45	31	16	0	17	23	16	·784	15
June . .	6	4	10	9	6	5	14	21	27	29	27	17	5	10	27	42	44	39	25	6	9	23	25	16	·655	12
July . .	3	5	9	7	3	6	20	29	36	37	34	20	4	14	39	43	50	43	29	11	5	17	18	15	·633	18
August. .	8	2	9	10	6	5	18	28	36	39	33	19	3	19	35	46	46	40	27	8	10	20	21	18	·643	20
September .	0	10	19	20	13	2	16	31	39	43	35	20	2	20	36	41	40	32	19	3	18	23	21	13	·754	20
October .	0	8	14	16	9	7	26	41	54	53	34	10	18	38	49	48	41	31	15	5	5	18	16	9	·938	30
November .	5	5	10	10	5	7	26	40	54	51	32	7	26	46	54	51	40	29	12	4	11	16	15	10	30·029	20
December .	6	0	8	10	5	8	28	45	59	57	36	2	23	44	55	53	42	30	15	0	9	12	10	9	·013	20
Year . .	4	5	13	14	9	4	21	36	47	48	38	18	6	28	43	48	45	37	23	5	9	18	19	13	29·867	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	6	1	10	16	14	3	12	31	49	54	40	13	18	37	48	41	32	22	12	1	9	12	11	10	30·055	20
February .	6	5	15	16	15	0	18	35	50	52	43	21	10	30	45	47	40	29	19	1	9	18	16	9	·019	20
March . .	1	10	27	35	27	11	9	32	46	53	46	30	2	20	37	44	42	30	24	4	17	22	25	18	29·966	20
April . .	8	7	20	24	16	2	16	30	46	45	38	20	2	22	39	47	48	35	22	7	13	25	28	19	·819	18
May . .	5	18	30	27	24	9	11	26	38	43	37	25	6	12	28	39	38	28	14	3	14	29	26	13	·724	20
June . .	0	10	17	23	17	6	6	17	24	29	31	20	9	7	19	31	33	25	15	0	12	28	25	14	·586	15
July . .	8	4	12	16	16	5	4	12	18	22	18	8	4	13	26	32	31	25	10	6	22	32	28	22	·587	20
August. .	7	9	19	21	23	9	6	12	22	28	25	11	1	15	27	29	33	28	18	5	20	29	32	23	·554	15
September .	0	15	26	28	24	10	5	21	32	36	31	16	9	24	34	33	26	20	8	9	28	34	28	17	·703	12
October .	5	15	25	28	23	8	6	26	40	44	33	13	9	23	30	29	27	18	6	13	20	21	14	7	·758	15
November .	4	14	21	21	12	2	18	33	47	51	38	14	20	34	42	41	31	18	2	10	17	18	11	7	·904	12
December .	9	5	14	15	14	4	16	35	54	55	41	10	24	39	49	48	41	25	10	6	17	21	16	16	·985	12
Year . .	2	9	20	22	19	5	11	26	39	43	35	17	7	23	35	38	35	25	13	3	16	24	22	15	29·805	

TRIESTE.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Mid-night.	Mean.
January	5	5	4	3	1	2	1	6	12	14	13	6	7	17	16	17	15	11	5	1	6	8	8	7	30·052
February	15	12	6	0	4	7	6	0	4	6	6	1	7	15	18	17	13	9	2	3	9	11	12	11	29·845
March	7	5	2	7	8	8	4	4	12	13	11	8	1	7	11	15	16	13	7	0	6	10	11	8	·800
April	8	2	4	9	12	11	5	2	7	7	6	2	0	3	6	10	12	11	5	5	12	13	14	13	·730
May	6	2	2	5	6	4	0	5	10	10	8	5	1	6	8	12	15	13	8	3	7	10	11	9	·848
June	8	2	2	4	4	1	3	8	11	11	9	6	0	5	7	10	16	21	14	7	4	9	11	12	·876
July	4	2	4	7	7	5	1	6	11	13	10	8	3	2	4	7	12	14	14	9	2	5	9	9	·835
August	2	0	3	7	6	3	2	7	11	12	11	7	2	2	6	11	13	17	11	2	6	9	9	8	·886
September	7	3	2	6	8	7	2	5	11	12	10	4	3	9	12	13	15	15	8	1	9	11	12	11	·981
October	4	0	4	6	8	7	3	5	11	13	11	7	1	8	9	12	10	8	1	2	7	9	6	5	·931
November	12	8	4	2	5	7	4	2	6	6	3	5	11	16	17	15	12	7	0	5	11	15	14	14	·995
December	5	6	4	1	4	5	2	4	10	12	8	1	10	15	15	15	13	9	3	2	8	9	11	11	30·052
Year	7	4	0	4	6	6	2	4	10	11	9	4	3	9	11	13	14	12	6	0	7	10	11	10	29·903

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Mid-night.	Mean.	Days.
January	4	6	7	6	3	0	3	6	11	12	7	0	12	22	21	19	16	11	4	2	8	9	10	9	30·256	22
February	10	11	5	0	2	1	0	4	7	7	7	5	6	14	15	16	14	9	4	2	4	6	8	6	29·972	27
March	0	0	0	1	0	2	9	17	23	24	19	15	4	7	14	20	23	22	15	8	1	2	2	2	·973	27
April	4	5	5	7	9	4	8	19	19	15	13	10	5	0	5	9	11	14	9	2	2	1	2	4	·916	9
May	2	0	3	6	5	0	5	11	16	16	13	10	5	2	9	13	18	18	13	8	3	7	7	4	·912	20
June	2	1	5	6	3	2	9	14	17	17	18	14	7	1	4	11	19	21	18	15	6	0	3	2	·952	19
July	0	2	5	5	3	0	6	12	16	15	14	11	4	0	2	8	15	18	16	11	2	0	3	4	·898	37
August	3	3	4	6	4	1	4	9	15	17	14	11	6	1	4	10	12	17	17	7	1	5	2	1	·928	38
September	6	5	1	4	5	4	2	9	16	15	12	5	0	7	13	19	20	18	11	3	6	9	9	7	30·083	20
October	0	2	6	4	2	1	9	15	20	17	14	8	2	11	15	18	18	11	5	0	6	5	1	2	·104	23
November	11	9	5	1	2	4	1	6	13	9	6	1	8	15	19	20	17	13	6	1	7	11	12	13	·266	20
December	4	1	0	4	7	6	4	3	11	13	11	2	7	12	11	11	10	6	1	2	6	8	10	7	·079	15
Year	3	2	1	3	3	1	4	10	15	15	12	8	0	7	11	14	16	15	10	4	3	5	5	4	30·028	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January	4	3	6	2	0	0	1	8	15	17	16	7	7	17	19	19	18	13	7	2	3	6	7	9	30·022	27
February	17	12	6	3	9	14	14	7	0	4	6	0	7	15	19	19	13	7	2	7	15	17	19	22	29·729	33
March	12	8	3	9	13	15	13	4	4	8	9	5	1	8	9	10	10	7	2	4	7	15	18	17	·688	33
April	13	4	6	13	22	22	17	13	8	5	3	6	4	2	4	4	2	0	6	15	20	20	25	25	·619	26
May	30	17	1	9	15	19	20	15	7	6	9	9	18	19	22	21	15	2	11	16	26	30	37	41	·741	5
June	21	9	0	6	5	4	2	5	11	11	2	5	9	13	13	18	20	17	13	6	9	14	19	27	·737	7
July	7	15	18	20	20	20	4	2	7	7	11	13	15	15	12	7	5	2	4	2	5	7	6	1	·771	5
August	2	0	11	23	14	9	4	8	17	26	35	19	4	20	29	30	30	29	9	13	24	16	17	26	·714	3
September	1	6	10	15	19	17	11	0	7	11	14	12	5	0	1	0	0	0	2	7	9	0	4	9	·768	8
October	14	9	1	9	12	14	15	7	4	3	6	1	4	10	8	8	7	5	0	6	12	15	17	20	·776	23
November	29	21	14	0	7	15	16	11	8	9	13	22	27	30	23	13	7	2	9	16	22	29	33	34	·705	15
December	5	7	5	2	8	10	6	1	5	9	3	6	13	16	13	12	9	6	0	4	12	17	18	18	·943	22
Year	12	6	2	9	12	13	10	5	3	7	6	1	6	11	12	12	10	8	1	6	14	16	18	21	29·768	

MAGDEBURG.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Mid-night.	Mean.
January	2	2	2	4	6	4	0	7	11	13	14	5	5	11	11	8	4	3	0	4	3	3	2	1	29·936
February	6	5	3	9	9	9	5	2	4	7	9	6	2	9	12	13	11	4	2	7	13	10	10	9	·762
March	5	2	2	5	6	4	0	6	8	9	10	8	1	6	12	17	15	9	2	3	6	7	8	7	·609
April	0	3	4	6	4	0	7	13	14	17	13	7	3	5	12	16	17	16	8	1	2	4	4	3	·612
May	6	3	2	1	6	12	14	17	17	16	12	6	1	8	17	22	26	24	20	10	2	3	7	8	·723
June	6	4	1	2	5	8	12	14	13	11	9	4	3	9	15	17	22	20	16	10	1	6	8	7	·771
July	5	0	3	2	0	3	6	11	11	11	7	4	1	6	9	11	15	15	12	5	3	7	8	7	·659
August.	6	3	1	4	4	1	4	8	9	11	7	1	1	4	9	13	16	16	11	0	4	7	9	9	·742
September	1	1	6	7	7	2	4	11	15	15	12	11	0	8	14	17	17	13	4	4	7	8	7	5	·878
October	2	6	9	11	11	11	6	5	6	10	12	8	3	2	4	6	4	3	6	7	8	6	2	1	·758
November	4	2	2	4	6	6	3	4	6	9	7	1	7	13	13	10	6	1	3	6	7	8	8	8	·833
December	0	1	1	5	9	9	6	0	5	10	8	1	7	12	9	4	0	3	4	6	7	8	7	4	·984
Year	3	1	2	4	4	2	2	8	10	12	10	5	2	8	11	13	13	10	5	1	5	6	7	6	29 772

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Mid-night.	Mean.	Days.
January	3	5	8	11	13	9	6	4	8	13	13	2	6	9	6	3	0	2	6	8	9	6	4	0	30·057	13
February	14	12	11	10	6	2	9	19	25	28	27	20	12	2	6	10	11	7	6	2	4	8	13	19	29·864	18
March	17	15	12	11	4	5	12	22	28	29	28	26	16	6	2	11	14	13	7	8	8	14	16	24	·722	20
April	0	4	5	7	4	3	10	18	20	21	19	10	4	6	17	20	21	19	11	0	3	4	5	1	·688	24
May	6	4	6	8	12	17	22	25	25	22	16	7	1	9	18	27	32	32	28	17	7	2	3	5	·766	40
June	2	2	3	6	11	18	22	24	24	22	17	11	4	5	13	22	29	31	28	22	11	3	2	1	·874	22
July	1	2	3	0	4	11	16	20	18	18	15	10	2	4	10	12	22	24	22	15	4	1	1	0	·781	20
August.	1	1	2	1	0	7	15	19	20	22	19	11	4	4	11	18	21	22	19	9	6	0	1	1	·815	20
September	6	5	5	5	2	5	13	20	23	21	17	10	2	9	17	20	20	17	8	0	2	3	0	5	·969	30
October	13	17	17	15	10	5	1	10	13	18	19	13	7	4	1	5	1	6	9	8	5	2	11	19	·863	20
November	9	11	14	11	6	2	6	15	18	20	20	11	1	6	7	9	6	1	1	0	2	0	3	6	·815	12
December	4	3	4	9	10	11	10	5	10	21	12	4	6	14	12	9	4	2	6	9	9	7	6	3	30·167	12
Year	5	6	6	5	2	3	9	17	19	21	18	11	3	4	10	14	15	13	9	4	1	1	2	5	29·865	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Mid-night.	Mean.	Days.
January	5	3	4	0	2	2	0	6	2	3	4	2	8	13	15	11	7	4	0	5	5	7	8	9	29·890	50
February	16	15	6	1	4	7	7	4	2	2	3	4	11	18	18	17	15	6	0	7	13	18	22	22	·737	40
March	7	3	4	9	12	12	7	2	1	3	6	6	2	3	9	11	10	3	3	6	9	12	12	12	·606	38
April	3	0	3	5	5	2	3	10	10	15	10	4	0	4	11	15	16	15	6	2	4	7	8	7	·583	30
May	0	6	13	10	5	1	4	7	9	13	13	11	8	4	2	8	13	13	9	3	5	5	4	2	·686	12
June	15	9	7	6	7	3	8	5	0	4	5	10	15	16	20	22	20	13	4	2	11	17	19	20	·747	12
July	15	8	3	1	0	0	0	1	1	1	0	6	7	9	11	10	13	13	12	5	8	15	19	21	·596	12
August.	19	11	6	0	3	5	4	2	1	0	0	4	8	8	10	12	15	13	8	1	8	12	17	23	·696	20
September	9	1	10	19	21	19	13	5	4	2	0	0	0	1	6	6	6	3	6	16	20	19	19	17	·861	15
October	3	1	7	11	14	18	11	1	2	6	9	6	2	2	2	3	0	5	6	6	8	7	6	8	·732	32
November	15	11	5	3	8	13	12	7	5	4	4	11	14	17	15	11	6	1	7	12	16	19	21	24	·856	30
December	2	1	1	3	7	7	5	0	6	12	7	1	9	11	9	5	1	1	3	6	7	7	6	2	30·033	30
Year	9	5	1	4	6	7	4	0	1	4	3	0	5	8	11	11	10	6	1	5	10	12	13	14	29·752	

BEN NEVIS.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
January	2	4	5	11	15	17	15	9	7	1	4	4	0	1	1	3	7	9	12	14	15	12	9	4	25·252
February	3	2	7	11	9	10	9	5	0	4	6	5	2	2	4	5	0	4	6	7	7	6	6	6	·244
March	1	5	11	15	15	14	12	5	1	1	6	8	9	5	4	1	3	4	7	8	8	7	6	4	·285
April	4	8	13	16	16	13	8	3	0	5	7	11	11	11	7	4	5	4	3	6	5	3	2	1	·448
May	1	7	12	17	20	18	14	12	8	4	1	3	7	12	11	10	9	8	8	10	12	11	7	4	·356
June	2	9	13	16	15	14	11	6	3	1	2	4	6	6	6	7	5	5	6	7	11	10	8	3	·481
July	3	8	14	17	18	16	12	8	5	2	3	6	9	10	9	8	7	6	6	6	9	8	7	2	·410
August	3	9	15	21	24	22	16	11	6	1	3	8	12	12	12	10	8	7	8	11	12	11	8	3	·267
September	1	3	9	13	15	13	9	6	4	1	0	5	7	4	2	1	1	3	5	10	11	9	7	4	·336
October	1	4	10	11	9	9	6	0	3	4	7	6	4	3	3	1	1	4	6	5	4	1	0	1	·197
November	1	4	6	8	9	9	3	4	9	12	11	6	2	6	7	6	3	1	0	4	5	6	5	4	·195
December	2	2	3	7	9	9	6	2	4	9	13	8	3	2	4	1	3	1	4	5	5	5	4	2	·244
Year	1	5	10	14	15	14	10	5	1	2	5	6	6	4	3	3	3	4	6	8	9	7	6	3	25·310

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January	12	15	10	12	13	8	4	1	7	9	11	8	5	3	4	6	9	9	9	7	5	0	6	14	25·386	18
February	10	11	14	15	12	7	4	1	11	14	17	16	15	8	3	0	2	4	3	2	0	2	6	10	·361	30
March	9	11	15	18	16	13	10	4	1	7	11	15	16	12	7	4	4	4	6	6	4	2	1	4	·378	40
April	4	8	12	16	16	11	6	1	2	5	8	10	11	10	6	3	4	3	3	5	5	3	1	2	·544	50
May	8	11	14	17	18	14	10	5	1	3	7	12	14	17	15	12	7	4	2	4	6	4	0	6	·464	40
June	10	15	19	20	19	15	10	6	1	3	6	10	11	12	11	9	8	5	4	5	7	5	0	7	·610	48
July	8	10	15	15	14	11	7	3	1	3	6	10	12	13	13	12	10	8	7	7	8	7	3	2	·529	36
August	11	15	20	24	24	21	15	8	2	3	10	14	17	17	15	12	12	10	9	9	9	6	0	7	·380	30
September	14	14	14	16	14	10	4	3	8	11	11	15	16	12	10	6	2	0	2	5	1	6	10	13	·577	23
October	13	12	13	12	10	6	2	7	11	14	16	17	14	7	7	1	2	5	3	1	4	6	13	15	·539	26
November	21	21	23	22	22	19	12	3	13	21	28	27	23	19	10	9	11	9	7	2	5	8	17	20	·406	19
December	18	18	18	20	23	19	11	2	12	18	23	22	15	12	8	7	5	8	8	10	8	2	4	9	·452	20
Year	12	13	16	17	17	13	8	1	5	9	13	15	14	12	9	7	6	6	5	5	4	1	4	9	25·469	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January	5	2	2	10	17	23	21	16	15	10	4	0	3	4	4	2	7	9	13	16	19	19	16	16	25·171	34
February	5	3	8	12	10	16	12	6	3	1	5	4	0	2	5	6	3	7	9	11	10	8	8	9	·236	26
March	13	4	8	14	15	16	14	8	5	4	1	0	1	5	7	8	6	2	4	8	12	15	17	19	·174	27
April	1	7	13	15	20	17	13	7	5	3	6	8	10	10	11	5	3	2	3	8	7	7	6	5	·289	21
May	11	3	12	22	27	26	23	19	17	13	11	7	0	7	7	10	10	13	17	20	23	23	23	21	·255	26
June	9	2	9	13	14	16	14	11	9	8	5	3	2	2	1	4	2	5	10	11	15	18	18	17	·272	26
July	10	3	7	14	18	18	18	14	13	8	5	1	5	6	4	6	7	10	16	18	22	25	26	27	·253	27
August	1	8	15	22	27	24	20	16	12	8	2	4	7	9	11	11	9	7	10	16	19	19	18	13	·143	35
September	7	4	2	8	10	10	9	8	8	7	5	1	0	4	6	6	3	1	4	10	14	17	17	15	·222	44
October	4	6	12	14	12	14	13	6	4	4	3	3	4	2	4	2	2	7	12	14	16	16	12	10	24·982	35
November	13	3	2	6	8	8	3	4	9	8	5	3	10	14	15	16	12	10	3	0	8	13	17	18	·995	38
December	1	0	0	5	7	7	9	5	3	6	8	5	2	3	4	3	6	3	2	6	8	7	7	5	25·173	31
Year	7	1	7	13	15	16	14	9	7	4	1	0	0	0	1	0	1	4	8	12	14	16	15	15	25·180	

FORT-WILLIAM.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
January .	5	3	1	7	13	17	16	11	7	1	2	0	6	5	5	0	2	7	9	14	13	14	11	11	29·900
February .	4	3	5	7	8	5	3	4	6	10	7	6	4	10	14	12	9	1	4	7	5	6	5	9	·857
March . .	5	2	4	6	6	2	1	5	7	9	8	6	0	4	10	11	13	6	3	3	4	7	6	6	·934
April . .	7	6	4	3	2	8	11	14	12	12	5	1	6	10	19	19	20	16	12	2	2	7	6	9	30·063
May . .	9	6	1	3	4	2	1	4	2	0	4	6	8	8	11	11	11	7	4	4	10	14	13	13	29·906
June . .	10	8	4	4	5	9	10	11	6	4	1	2	8	9	14	17	20	15	12	3	4	10	11	14	·988
July . .	6	3	2	3	3	1	4	6	5	4	1	2	2	4	8	10	11	8	6	0	6	11	10	8	·901
August. .	3	1	7	10	11	7	4	2	1	2	0	1	1	0	4	5	6	4	1	7	11	14	12	9	·747
September .	3	1	5	7	10	5	2	2	3	5	0	2	2	3	8	9	10	3	0	8	9	11	8	7	·839
October .	0	3	9	9	10	6	4	5	6	8	6	4	2	2	6	5	4	4	4	7	5	4	0	1	·749
November .	0	2	6	8	9	4	2	9	13	18	17	9	1	8	13	10	9	4	3	1	0	4	1	3	·779
December .	4	3	5	8	11	9	5	2	7	14	17	11	3	3	9	5	5	1	1	2	1	5	2	2	·874
Year . .	4	2	3	5	6	3	1	4	5	7	5	3	3	6	10	10	10	4	2	4	6	9	7	8	29·878

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	11	10	10	11	11	9	5	4	8	12	12	7	2	1	1	3	4	8	8	8	2	2	2	8	30·016	18
February .	11	9	12	10	9	1	4	15	20	23	23	18	8	1	8	9	9	2	1	1	3	4	10	11	·007	30
March . .	2	0	3	1	1	5	10	16	18	19	15	12	3	5	13	17	21	14	10	3	2	0	1	0	·038	40
April . .	8	9	6	7	8	16	20	22	17	13	3	3	12	17	25	27	28	22	17	4	3	6	6	8	·154	50
May . .	7	8	6	8	11	17	18	17	14	10	3	2	10	13	18	21	23	20	16	8	1	6	7	6	29·991	40
June . .	7	8	6	8	11	17	19	20	16	10	4	0	8	12	16	21	24	22	19	10	2	5	5	8	30·121	48
July . .	3	3	5	5	5	13	14	16	14	14	4	1	5	10	15	18	21	17	15	7	0	5	6	5	·029	36
August. .	2	2	5	5	5	3	7	13	12	11	7	5	2	4	10	11	13	10	6	2	4	5	4	0	29·866	30
September .	11	6	7	4	2	9	16	24	26	23	15	13	5	0	10	15	20	17	12	2	4	4	9	14	30·089	23
October .	14	10	12	8	5	1	7	19	22	24	20	16	6	1	8	10	12	3	2	1	3	7	14	16	·158	26
November .	24	21	23	21	17	11	4	12	20	31	35	29	22	13	5	7	5	5	3	1	6	12	21	28	·019	19
December .	21	19	20	23	25	17	6	9	20	30	32	28	19	8	1	0	3	8	6	7	1	4	11	18	·108	20
Year . .	6	4	6	5	3	4	8	16	17	18	14	10	2	3	10	12	13	9	7	2	1	0	3	6	30·049	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	18	15	6	4	14	19	22	22	20	9	7	7	12	12	9	3	0	6	10	15	17	21	21	26	29·790	34
February .	6	1	10	12	10	15	12	5	3	6	5	5	2	10	15	12	0	7	9	13	10	13	11	16	·754	26
March . .	16	11	1	6	7	4	5	2	1	1	2	4	9	10	16	14	15	6	3	6	8	15	18	25	·787	27
April . .	10	4	6	7	11	7	8	3	1	4	0	2	2	0	9	10	8	4	1	10	12	16	13	15	·896	21
May . .	17	7	8	17	23	21	19	13	14	14	15	11	9	6	6	4	0	6	10	18	25	30	27	28	·787	26
June . .	17	9	1	4	7	5	6	6	10	10	8	8	8	5	9	9	9	4	1	6	15	20	22	24	·773	26
July . .	15	9	3	10	14	14	14	12	12	11	9	5	5	4	7	7	4	1	4	11	17	22	22	23	·737	27
August. .	4	5	15	21	23	20	15	10	9	6	6	2	0	3	1	3	2	4	7	16	20	24	21	18	·627	35
September .	11	6	3	5	11	8	6	5	6	2	6	3	8	8	11	9	10	1	3	12	14	19	17	17	·707	44
October .	12	3	7	11	13	12	12	6	8	6	9	10	10	7	8	6	0	10	14	22	20	19	18	16	·644	35
November .	11	7	1	3	7	3	4	5	10	15	10	2	7	14	18	14	11	5	6	1	2	11	12	21	·592	38
December .	4	3	1	5	6	2	4	1	5	10	14	9	1	4	9	5	8	4	2	0	2	1	2	3	·727	31
Year . .	12	6	4	9	13	11	11	6	6	2	3	3	6	6	10	8	5	1	4	11	14	18	17	19	29·735	

SODANKYLÄ.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
January .	2	0	2	3	5	6	10	9	4	0	3	0	2	0	1	2	3	5	5	6	3	2	4	2	29·087
February .	0	3	2	7	10	11	12	12	6	2	2	1	3	4	7	5	6	7	7	7	5	4	4	5	·255
March . .	9	11	12	13	13	11	9	4	2	2	0	4	6	9	11	11	11	9	12	8	7	5	1	4	·002
April . .	0	0	0	2	2	5	6	6	6	4	3	1	1	5	6	8	8	7	4	4	4	1	1	0	·484
May . .	4	7	6	7	6	8	8	7	7	6	6	3	1	3	8	10	12	14	13	8	6	2	2	2	·192
June . .	5	8	9	12	12	12	12	12	11	8	4	3	1	4	12	15	17	18	19	17	9	4	1	3	·318
July . .	1	4	5	5	7	9	8	7	8	9	5	4	0	3	7	11	10	11	13	11	7	2	0	1	·164
August. .	4	4	6	7	7	9	9	8	6	6	4	2	0	4	8	11	11	13	12	9	7	3	0	3	·138
September .	7	7	2	2	4	4	1	2	5	6	5	7	6	12	9	8	6	1	5	10	12	13	13	13	·284
October .	10	8	5	1	2	4	7	8	2	0	1	2	4	6	6	5	6	2	1	3	4	7	7	8	·504
November .	2	0	1	3	6	9	9	6	2	4	4	1	1	2	1	1	1	2	2	3	4	4	4	4	·236
December .	4	1	0	1	5	9	11	9	6	1	4	3	0	1	2	3	4	1	0	2	3	5	6	5	·316
Year . .	4	4	3	3	1	1	0	0	1	2	3	0	1	4	5	6	6	5	5	2	1	2	3	4	29·248

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	2	3	8	4	7	8	15	15	10	4	6	2	2	9	14	19	13	17	14	11	6	1	3	11	29·287	5
February .	46	35	24	19	11	3	8	12	18	24	31	34	39	39	37	31	19	7	3	10	21	30	43	54	·439	5
March . .	1	4	2	7	9	17	11	2	4	2	3	5	11	10	15	14	13	2	7	8	7	6	7	4	·019	5
April . .	10	3	6	9	10	15	16	15	17	17	13	4	1	6	6	10	15	16	14	13	7	6	7	10	·754	5
May . .	15	6	1	5	5	9	14	17	23	22	20	16	13	10	2	2	9	13	13	15	20	19	22	22	·322	5
June . .	9	17	21	31	32	21	19	16	14	11	3	4	9	15	22	26	32	22	23	18	18	13	2	7	·392	5
July . .	2	9	9	15	19	19	18	17	15	13	9	2	3	11	17	19	17	19	20	17	12	6	2	0	·509	5
August. .	1	6	13	16	20	24	22	19	19	17	11	11	4	5	14	17	21	24	28	25	21	12	13	7	·407	4
September .	1	0	8	13	6	12	19	15	12	12	8	0	9	11	14	17	17	17	15	7	4	2	5	2	·339	4
October .	11	11	10	4	5	4	0	3	0	2	2	0	5	9	13	10	7	9	15	2	2	3	4	5	·652	4
November .	4	4	2	1	1	0	0	5	6	13	9	4	3	1	5	4	4	3	0	4	6	6	6	5	·198	5
December .	15	11	1	5	6	13	19	26	33	18	12	11	7	3	3	3	4	13	11	17	15	17	22	18	·577	5
Year . .	3	0	3	6	7	8	8	6	6	9	7	4	1	1	4	6	8	7	8	6	7	5	5	7	29·408	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	30	26	20	17	12	5	5	7	6	16	24	26	26	27	26	22	15	9	6	13	10	18	22	30	29·123	8
February .	2	5	3	9	14	16	18	16	11	5	0	1	6	9	12	8	10	8	8	9	5	6	9	7	·366	10
March . .	25	31	32	32	34	32	18	8	3	6	4	13	18	26	26	28	30	28	24	19	17	9	2	19	28·980	5
April . .	9	3	3	9	12	10	12	12	12	15	13	6	5	5	1	3	6	9	15	16	12	12	13	13	29·212	5
May . .	7	5	5	1	2	1	3	4	0	1	2	2	1	1	2	1	4	5	8	4	0	2	5	5	·046	5
June . .	15	19	16	6	4	5	10	15	17	19	20	17	22	14	3	1	5	7	8	13	9	11	14	17	·179	5
July . .	4	5	4	3	7	6	3	1	3	2	0	2	0	2	2	5	6	6	9	5	3	1	3	2	·073	6
August. .	10	4	2	1	4	8	6	4	3	2	1	2	0	2	2	4	4	4	1	2	4	6	7	9	·132	6
September .	24	21	12	6	1	3	6	9	13	16	13	12	15	18	18	18	11	7	2	7	15	17	29	24	·298	7
October .	4	0	3	5	7	12	11	8	3	1	3	6	2	2	1	1	1	4	4	4	2	5	4	5	·405	13
November .	0	2	1	5	9	11	11	6	2	2	3	2	0	0	2	4	4	3	3	5	5	5	5	4	·047	10
December .	10	9	8	4	6	6	6	3	6	12	17	13	7	5	2	2	0	0	1	3	2	1	0	2	·296	7
Year . .	2	1	0	1	2	2	4	3	1	2	3	3	2	0	0	1	2	2	1	1	0	1	3	3	29·180	

BOSSEHOP.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.
January .	2	1	1	6	8	7	9	5	2	2	5	5	3	2	1	2	3	3	0	1	3	1	4	5	29·520
February .	1	1	1	2	5	6	7	11	10	10	4	3	2	2	7	9	7	6	5	3	5	4	4	2	·638
March . .	8	9	8	8	2	2	2	5	6	4	4	3	2	3	3	6	7	6	4	2	3	7	8	9	·557
April . .	0	1	0	1	1	1	1	4	4	3	3	2	0	0	2	2	0	1	2	2	2	2	0	1	·958
May . .	3	2	1	0	3	3	3	2	1	0	4	3	4	4	2	2	4	7	8	4	3	2	4	5	·735
June . .	12	13	13	11	9	6	3	2	2	2	0	1	2	6	10	14	15	13	11	10	6	0	6	9	·866
July . .	8	9	10	8	8	7	6	5	4	2	1	4	8	10	11	12	13	11	10	8	2	4	7	10	·741
August .	10	8	4	0	2	4	6	4	2	2	0	1	1	3	3	4	3	1	0	0	2	2	4	6	·631
September .	4	1	5	7	8	12	12	12	13	8	8	5	3	2	1	3	6	9	13	16	14	13	12	8	·729
October .	4	2	3	4	8	9	10	7	8	5	3	2	2	4	2	2	3	5	9	10	12	10	10	8	·941
November .	1	2	2	4	4	5	7	6	1	6	10	6	4	3	1	0	1	0	1	1	0	1	0	1	·748
December .	2	0	2	5	6	6	8	5	1	4	10	8	4	1	2	1	1	2	4	3	1	4	5	4	·788
Year . .	5	4	2	0	2	3	5	4	2	1	1	1	0	1	2	2	2	2	1	0	2	4	5	5	29·738

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	7	5	7	8	10	4	2	2	6	9	14	6	9	14	13	6	7	2	4	7	12	8	7	11	29·459	4
February .	8	3	6	5	8	13	13	21	13	16	11	7	1	9	2	19	19	11	10	14	19	19	16	5	30·000	4
March . .	6	4	4	2	2	6	5	2	0	1	3	7	10	9	9	7	7	4	2	6	7	7	3	4	29·656	4
April . .	6	4	2	2	3	7	10	14	13	11	10	6	4	0	8	8	10	10	9	5	2	2	6	6	30·363	7
May . .	9	5	0	8	7	12	15	13	17	8	11	10	11	11	4	2	10	15	18	16	16	15	10	9	29·795	4
June . .	13	20	24	26	24	22	13	8	5	0	5	10	4	11	13	21	23	26	24	20	13	2	3	9	30·004	4
July . .	12	14	15	14	12	9	7	4	4	0	2	7	13	16	17	15	13	10	14	8	5	7	7	11	29·886	4
August. .	19	21	20	23	24	20	14	13	7	2	1	8	13	20	20	24	28	29	27	18	7	3	11	16	·747	4
September .	1	2	1	1	0	8	11	11	11	12	6	4	3	2	9	13	11	8	7	4	5	0	0	1	·705	4
October .	9	7	8	1	14	7	4	4	3	5	11	7	5	4	1	2	1	5	5	9	2	4	1	6	30·022	5
November .	18	14	10	7	7	5	1	2	9	12	26	19	14	12	7	7	5	5	2	5	7	9	14	22	29·946	4
December .	2	7	8	10	6	9	10	6	0	4	11	10	6	6	6	2	0	1	2	0	4	3	6	4	·955	8
Year . .	1	1	2	3	2	4	4	4	5	4	6	2	0	2	4	5	6	7	8	5	2	1	1	0	29·878	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January .	15	1	12	27	28	24	28	6	3	14	14	8	11	15	2	3	0	2	1	4	7	7	8	13	29·671	4
February .	37	26	7	4	17	24	30	37	39	43	31	28	23	11	4	0	4	12	17	20	27	35	42	50	·607	4
March . .	10	11	9	4	9	9	15	18	21	13	12	9	5	3	1	4	0	4	6	11	14	16	16	15	·617	12
April . .	13	9	7	4	0	8	8	7	6	9	9	8	10	9	10	7	3	2	2	7	10	12	15	16	·832	12
May . .	2	0	2	4	6	7	7	7	4	3	2	3	3	3	1	1	1	1	1	2	3	4	7	7	·702	15
June . .	1	2	3	6	4	7	4	4	0	13	8	9	10	7	8	1	1	1	1	5	3	3	6	6	·861	6
July . .	0	0	2	2	2	1	0	0	1	4	4	4	1	2	2	3	4	2	3	3	0	2	3	0	·902	7
August. .	5	5	5	5	2	0	0	0	4	5	4	1	0	2	6	10	11	7	5	4	2	0	2	6	·626	12
September .	18	11	4	2	11	18	25	2	28	21	19	19	11	10	4	2	10	16	20	24	21	22	25	24	·820	8
October .	15	10	2	10	14	19	19	16	13	13	11	7	4	2	1	4	8	11	11	11	14	13	12	17	·885	5
November .	3	4	4	9	10	15	14	14	10	3	6	4	0	10	9	7	9	8	10	10	7	6	2	4	·685	4
December .	48	39	28	20	3	4	20	29	30	23	16	20	26	33	30	24	20	16	12	1	14	36	50	66	·325	4
Year . .	14	9	3	2	8	11	14	14	12	8	5	5	4	3	3	3	0	2	4	6	9	12	14	17	29·711	

JAN MAYEN.—MEAN BAROMETER AND DEPARTURES.

Complete Months.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January	12	10	4	2	9	10	5	2	0	1	0	2	7	7	11	11	10	4	3	9	10	10	11	9	29·409	
February	1	4	4	4	6	3	4	4	4	3	3	4	3	2	1	3	8	11	9	2	2	2	3	2	·289	
March	8	4	2	0	1	4	8	9	13	10	11	10	10	9	0	4	6	7	8	12	11	12	13	12	·976	
April	7	6	4	4	2	2	1	4	2	1	1	1	2	0	3	5	5	6	3	0	1	2	1	3	·758	
May	2	2	2	4	3	2	1	0	0	2	3	2	0	0	1	2	3	2	2	4	3	4	2	4	·779	
June	0	2	5	8	7	7	2	1	0	2	2	6	7	5	2	1	2	2	0	3	3	4	2	4	·937	
July	1	1	5	6	8	6	3	0	2	2	4	6	6	6	4	2	1	1	1	1	1	0	0	0	·954	
August.	4	3	4	8	7	2	1	1	4	4	9	11	7	7	3	1	1	2	2	2	1	1	0	0	·685	
September	3	4	8	13	12	9	6	4	2	3	5	8	7	6	5	2	2	4	8	7	5	2	3	1	·639	
October	2	7	11	10	10	7	2	2	5	8	8	9	9	5	1	2	3	6	5	2	1	1	5	9	·778	
November	5	5	7	8	8	6	4	0	6	9	9	7	6	4	3	1	3	0	3	0	0	1	3	3	·610	
December	2	2	5	7	9	6	5	2	2	7	6	4	1	3	6	2	0	2	2	3	4	2	3	1	·892	
Year	0	1	3	6	6	4	1	1	3	4	5	5	4	3	0	2	3	2	0	0	1	1	0	0	29·726	

Fine Days.

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Mid-night.	Mean.	Days.
January	19	7	7	6	3	2	8	14	22	29	28	25	19	15	5	1	6	12	7	8	16	19	28	33	30·029	4
February	79	67	59	60	39	22	9	6	26	33	51	59	65	58	49	47	45	31	30	21	4	29	59	99	29·305	4
March	23	20	18	20	16	6	0	6	19	19	24	27	26	21	14	6	0	1	2	0	9	13	18	21	30·319	5
April	40	33	31	27	20	11	4	19	20	26	26	30	34	26	18	12	11	18	7	3	0	17	36	40	29·856	4
May	11	11	9	8	4	4	2	4	10	10	8	7	4	3	6	6	0	1	0	3	4	1	1	4	30·051	5
June	16	13	13	13	7	2	8	11	9	18	19	18	20	15	11	11	1	2	7	5	9	13	19	23	29·924	4
July	9	9	12	8	9	5	2	7	9	10	11	11	16	13	9	5	0	2	4	2	4	7	8	13	·904	4
August.	17	2	2	8	4	1	9	11	12	13	17	22	10	7	5	2	2	14	4	7	5	7	19	20	·762	4
September	35	23	19	11	7	10	12	17	21	28	30	28	24	22	19	9	3	1	1	7	19	27	33	44	·885	4
October	28	31	32	39	38	24	13	4	1	6	10	24	23	28	22	30	25	32	26	19	8	3	19	30	·738	4
November	24	28	23	29	26	18	2	4	10	17	16	20	19	18	23	19	3	15	15	9	1	1	17	20	·919	4
December	9	3	5	0	2	1	2	5	12	14	12	8	4	0	2	2	3	4	9	2	6	7	4	11	·824	4
Year	26	21	19	19	14	6	2	8	14	19	21	23	22	19	15	12	7	5	4	2	5	12	22	30	29·876	

Cloudy Days.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mid-night.	Mean.	Days.
January	3	1	7	12	9	4	2	9	7	5	2	6	14	19	24	24	17	7	5	17	22	25	28	23	29·307	10
February	78	80	74	56	44	26	13	2	8	19	30	35	43	50	58	61	70	69	59	28	2	24	50	86	·203	10
March	20	6	3	10	15	24	28	27	28	24	23	20	11	6	4	8	15	12	17	30	26	22	26	24	·805	7
April	29	30	24	22	17	4	2	2	9	15	19	20	15	13	14	19	20	14	7	1	7	11	19	29	·624	10
May	20	14	11	7	5	4	4	0	4	2	6	10	10	13	16	13	17	13	10	3	4	9	17	22	·795	10
June	4	2	5	8	6	7	6	3	2	0	1	6	6	6	4	2	1	1	1	1	4	4	2	4	·936	10
July	2	1	6	6	9	6	4	6	2	1	3	6	4	5	2	2	0	0	0	3	4	4	4	6	30·009	10
August.	2	1	1	4	7	2	3	3	4	4	4	2	2	7	1	2	4	2	0	1	4	4	6	6	29·648	10
September	17	5	7	18	18	22	25	26	27	20	15	6	4	1	0	2	6	14	21	24	24	22	27	27	·447	10
October	20	17	7	4	4	7	12	13	13	15	13	9	10	16	17	15	14	1	5	9	17	20	25	27	·732	10
November	21	15	17	13	9	5	2	10	17	19	20	17	16	15	11	9	6	8	3	7	10	14	22	20	·514	10
December	5	5	9	11	10	9	5	2	2	4	3	2	1	0	1	3	5	5	5	5	10	6	6	5	·716	10
Year	11	10	5	2	1	1	1	0	1	1	3	3	5	7	10	11	12	8	5	1	5	8	11	16	29·645	